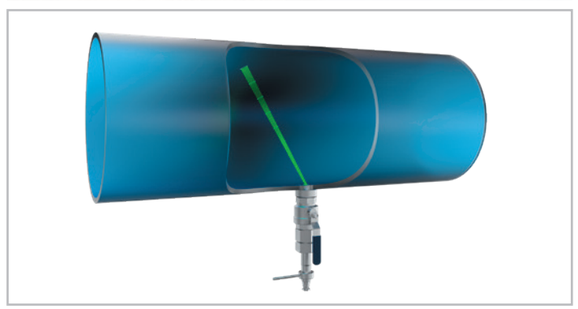
Precision farming and sustainable production

Success story
African continent
Customer information

Innovative measurement solutions
for valuable resources

Energy savings of up to 45%



Insertion measurement in a DN400 extraction pipe

Project Facts

Geographic region:
- Africa

Challenge:
- Optimizing water use in order to farm sustainably

Solution:
- Q-Eye PSC
- Insertion Type

Value:
- Sustainable use of rescources
- System optimization for increasing crop yield
- Water cost savings

Precision Farming to Sustainable Production

In Southern Africa, agriculture still forms a major part of the economy with much of the product exported to countries in Europe. One of the major crops in this region is sugarcane and is becoming a major topic in terms of energy and water use to bring sugar to our table.

The three main focus areas are:
- Sustainable use of resources to produce sugar
- System optimization for increasing the crop yield
- System efficiency optimization for energy and water cost savings

Buyers want to be informed of where and how sugar is being produced and whether this is being done in a sustainable way.
With the new connectivity and measurement technologies we have today, there continues to be a big move towards precision farming. Having measurement systems in place to determine exactly how much water to irrigate the crop with and when has already proven to increase the crop yield and quality. Accurate measurement data and good irrigation system control is required.

For many years the focus has been on crop production with little consideration on system efficiencies and operating costs. Therefore, we needed to prove significant savings on the operating costs to justify the capital investment.

Site inspection

« With the implemented flow measurement we could realize energy savings for the customer of between 35 to 45% with a payback period of between 6 to 9 months. »

Application Details

Area of Application	Irrigation
Measuring principle	Doppler technology
Sensor Type	Insertion
Pipe Diameter	DN400, DN450

Installation of insertion sensor to pipe

GWF's approach to the 3 focus areas:

The water used for irrigation of crops in Southern Africa is generally sourced from one of the major rivers or lakes in the area through a system of canals and piped networks. The water is also mostly reticulated through pumped systems. The current systems have little to no accurate measurement instruments to provide the data needed to move towards precision farming, sustainability reporting, and/or system optimization.

GWF, together with our partners in Southern Africa are providing the measurement equipment and know-how to measure the water from the source to crop thereby providing the flow measurement data required to make informed decisions towards system automation and optimization.

The resulting impact:

- Sustainable use of resources to produce sugar

With our measurement solutions in place, we are able to report on water source to crop down to the liters per kilogram of sugar produced. This means that at all levels our clients are able to drive their sustainability initiatives based on actual facts and figures through focused programs to achieve the most impactful results.

- System optimization for increasing the crop yield

At the pump station level, we do system optimization and through combining our measurement instrumentation with variable speed drives to control the precise delivery of water to the crop. Moreover, the pipe network is measured at various zones to enable the monitoring for network losses through leaks. Through finite control of the supply of water, the crop receives the right amount of water exactly when it is required which leads to better plant management resulting in higher crop yield.

- System efficiency optimization for energy and water cost savings

Through the implementation of the system we are able to optimize the energy and water usage to increase the yield of the crop as well as reduce the amount of water and energy needed. The results, energy savings of between 35 to 45% with a payback period of between 6 to 9 months.

Headquarter
GWF MessSysteme AG
Obergrundstrasse 119
6005 Lucerne
Switzerland

T +41 41 319 50 50
info@gwf.ch

GWF Technologies GmbH
Gewerbestraße 46f
87600 Kaufbeuren
Germany

T +49 8341-959990
info@gwf-technologies.de

www.gwf-technologies.de

Changes reserved, 23.09.2020 – KIe60210

printed in
switzerland